Chapter 8

Findings and Research Gaps

In previous sections, we used USDA data to describe the broad contours of agricultural contracting in the United States and relied on existing data and research to assess what we know about the causes and effects of contracting. Here, we summarize what we have found and identify some major research gaps and the contracting topics where the existing evidence is weak. We organize our discussion around three themes: the growth of contracting, who contracts and why, and government policy towards contracting.

The Growth of Contracting

Production and marketing contracts cover a large and increasing share of U.S. agricultural production. Contracts governed 36 percent of the value of production in 2001, up from 28 percent in 1991 and 12 percent in 1969. While overall data for agriculture provide an impression of a steady expansion in the use of contracts, data for specific commodities show that dramatic shifts can occur quite quickly. Tobacco and hogs each shifted rapidly to widespread use of contracts in just a few years, and producers expect a sharp expansion of contracting in fed cattle.

The shifts in some commodities are quite striking and raise several important questions. Specifically, do spot markets require certain volumes of trade to be effective and viable institutions? Are there "tipping points" in the use of spot markets—can spot markets become thin enough to lead remaining spot market users to shift rapidly to contracts?

Food companies face increasing pressure to document where and how their products were produced and distributed through the food system, from farms to processors to consumers. Such traceability facilitates food safety and pollution control, as well as the identification of differentiated products with valuable but subtle quality characteristics. Because contracting provides one way to achieve traceability, we expect contracting's share of agricultural production to continue to grow over the next decade. There are still a number of important unanswered questions. How important will traceability be, and will contracts be the primary means of assuring it? Will contracting to ensure traceability lead to sharp downward shifts in the use of spot markets?

Who Contracts, and Why?

Our data provide considerable detail on who uses contracts. Contracts and vertical integration now govern the production and marketing of most poultry, a majority of hogs, and a large share of fed cattle. Among crops, contracts dominate the exchange of tobacco and are important for producers of cotton, rice, and sugar beets. But spot markets still dominate the exchange of major grain and oilseed crops like corn, wheat, and soybeans and show no evidence of decline for these commodities. Within broad

commodity groupings, contracts are far more likely to be used by larger producers for more-differentiated products.

The more challenging question is why market participants rely on contracts, a question that may yield different answers for contractors and producers. Many producers cite reduced price risks from contracts, and we find that contracts clearly can be designed to greatly reduce such risks. But risk reduction is not a strong explanation for the growth in contracting; producers can use a variety of other methods to reduce price risks. Furthermore, if the primary effect of contracting was to reduce grower risks, then we would expect to see contract farmers receiving lower prices, on average, because risk reduction comes at a price. However, we find that contract prices frequently exceed average market prices for some commodities, and some producers may contract more to secure higher prices than to reduce price risks.

Higher prices are likely paid for supplying buyers with commodities of uniform or special attributes, often with a higher cost of production, or for guaranteeing a specified quantity of a product at a specified time. Buyers can ensure that they acquire the attributes they seek by using production contracts that govern inputs and production methods. Or they can use marketing contracts that offer price premiums for products that consistently meet attribute requirements. For example, contracts allow buyers to purchase meat from animals raised on organic feed, or from cattle with a certain type of genetic stock such as Black Angus. Similarly, buyers of processing tomatoes may seek different qualities needed for different processed products, while some corn or soybean buyers seek nonstandard products with specific attributes, such as corn high in oil content or high-oleic soybeans.

Producers of such differentiated products have good reason to seek the protection of a contract. Differentiation often requires producers to make new investments to achieve the desired attributes, and it also leaves the producer dependent on one or a few buyers of the product. To avoid the potential use of market power, producers may seek contracts that provide assurances of compensation for their investments.

Our research gaps lie in many of the details of contract incentives and design, which can be grouped into four topics. First, contract lengths can vary widely, even for producers of the same product. On average, hog contracts specify lengths of several years, although that can vary considerably. Most broiler contracts cover a single flock, although some do cover longer periods. Growers make long-term investments in each case, so additional research is needed to determine why short-term contracts are used. The issue is an important one in the broader economics literature on contracting (Masten, 1996), and it is an important missing element in our knowledge.

Second, contracts often specify widely different methods for determining prices and fees, even for growers of the same commodity. For example, many (although not all) broiler production contracts are designed as relative performance contracts, with base compensation on a grower's performance relative to a control group of other contract growers. Hog production contracts also may base compensation on relative performance, but it is

most commonly based on a formula, not relative to performance of a control group. Production contracts in horticulture frequently are designed as flat-fee contracts, in which growers bear no price risks but have substantial yield risks. Moreover, contract compensation structures appear to vary widely over time—there is a great deal of experimentation in them. We know very little about why different compensation arrangements are chosen and only a limited amount about how different contract designs affect grower performance.

Third, our discussion has generally been framed as a choice between contracts and spot markets, with little reference to a third alternative, vertical integration, which combines agricultural production and food processing under a single firm. One of the distinctive aspects of industrialized agriculture is that it is still carried out primarily by family-operated farms that are not very large businesses in terms of assets, employment, or sales. In turn, large processing and distribution corporations source their agricultural products through contracts with many small businesses, instead of operating the farms themselves.

We know from the 2002 Census data that farms owned by nonfamily corporations with more than 10 stockholders account for less than 2 percent of all agricultural sales, and that more than 98 percent of sales is accounted for by farms organized as sole proprietorships, partnerships, family corporations, and closely held nonfamily corporations. Anecdotal evidence suggests that small shares of fed cattle, broiler, turkey, and hog production are carried out on processor-owned farms. Vertical integration is not common in grains and oilseeds, and limited evidence suggests that it is declining in favor of contracting in fruit and vegetable markets.

We know very little about the tradeoffs of using vertical integration instead of spot markets or contracting. In particular, we know little about why some livestock processors choose to vertically integrate for some—but not all—of their supplies, and about whether vertically integrated farms perform more efficiently than independent contract operations. Consequently, we know very little about the circumstances in which vertical integration might be an efficient way to organize production.

Finally, while we know contracts can be designed to remove much price risk, and while surveys of growers cite risk reduction as one reason for contracting, we have only limited evidence on the actual effects of contracting on risk reduction, as well as the effectiveness of contracting vs. that of other methods in controlling price and output risks. In particular, we know very little about how changes in government policy, such as offering commodity programs or subsidized crop insurance, affect the use of contracting as a device to control risks.

Contracting and Government Policy

Contracts are part of the continuing shift to a more industrialized agriculture, and their growth causes controversy. Some of the controversy arises when contract producers realize lower costs or provide products that better meet consumer demand, taking business away from spot market participants. However, the controversy also reflects concern over buyer market power.

Contracts are often used in concentrated markets with few buyers, and we have shown that certain contract terms may, under the right market conditions, allow buyers to impose lower prices on producers in those markets—making the exercise of market power an issue of real concern in contract markets. But because contracts can lead to enhanced productivity and responsiveness to consumer demand, broad actions to ban or limit their use run the risk of raising production costs and reducing demand for farm products. Thus, it is important to distinguish those contract terms that extend market power without offsetting efficiency. Here we have considerable theoretical literature (such the articles referenced in Kwoka and White, or the specific agricultural analyses in Xia and Sexton or Love and Burton), but very limited empirical evidence from contract markets. In particular, we have little evidence on the extent to which rival firms use pricing clauses that create incentives to limit competition among themselves in the spot or contract markets.

In many livestock markets, particularly those governed by production contracts, processors and integrators contract with growers for services, not for animals. That is, the contractors provide growers with animals and many inputs, and growers provide labor, energy, and capital. In those cases, quite common in poultry and hog production, market power (or monopsony) in the market for animals is not the issue; rather, the important question of competition revolves around monopsony in the labor market for growers and whether growers have alternative outlets for work. While we understand where the competitive issue lies in these markets, we have virtually no empirical evidence on the extent of contractor monopsony in markets for contract growers.

Contracting provides a continuing challenge for government policy and for market performance in the area of information. We reviewed the effects of contracting's growth on the USDA voluntary price reporting program for livestock, as well as the early impacts of the statutory and regulatory response (mandatory reporting of contract and cash transactions). Thinning cash markets present a broad challenge, since many contract-pricing formulas use cash market prices as a base. We face several research challenges in this case. For example, do we observe poorer market performance when price reports are based on thin volumes of trade? Are there feasible alternatives to cash prices, such as input prices or retail/wholesale product prices, to serve as bases for contract prices? To what extent do market participants need market information on product attributes, in addition to base cash prices?

The expanded use of contracts to control food safety, food attributes, and production attributes through the food chain provides two sets of policy challenges. First, regulatory agencies will need to assess whether contractual arrangements provide incentives that benefit growers as well as buyers. Also, they will need to evaluate the placement of monitoring agents (perhaps third parties such as insurance companies or outside certifiers) who can ensure that contractual terms are carried out.

Second, spot markets can be used to deliver desired levels of food safety and product attributes when those characteristics are easy to measure at time of sale; buyers turn to contracts when measurement technologies are inef-

fective. The traditional advantage of spot markets—providing signals that can lead to efficient production—is still advantageous for the marketing of many farm products. Public and private investments have supported spot markets in the past by designing market institutions, providing market pricing and supply information, identifying marketable attributes, developing attribute measurements, and linking prices with those attributes. The extent of spot markets in the future will depend, in part, on the degree to which pricing systems can keep up with changes in product attributes and consumer demand. That, in turn, will depend on the public and private development of production and measurement technologies to bring those products' attributes to the market.